

Amendments to the Specification

Page 5, lines 12-18, please rewrite as follows:

To achieve the above object, there is provided in accordance with the present invention an electroless copper plating liquid for forming a thin film copper interconnection for a semiconductor device having a filled interconnection structure, characterized by containing ~~bivalent~~ copper ions, a complexing agent, an aldehyde acid, and an organic alkali.

Page 7, lines 4-9, please rewrite as follows:

Preferably, the ~~bivalent~~ copper ions have a concentration ranging from 0.01 to 10.0 g/L, the EDTA·4H has a concentration ranging from 0.5 to 100 g/L, the glyoxylic acid has a concentration ranging from 1 through 50 g/L, and the electroless copper plating liquid has a pH adjusted to a range from 10 to 14 by the TMAH.

Page 7, lines 10-21, please rewrite as follows:

A method of forming a copper interconnection on a semiconductor device according to the present invention is characterized by the steps of forming an auxiliary seed layer for reinforcing a copper seed layer in an interconnection groove defined in a surface of the semiconductor device using an electroless copper plating liquid containing ~~bivalent~~ copper ions, a complexing agent, an aldehyde acid, and an organic alkali, and performing an electrolytic plating process using the seed layer including the auxiliary seed layer as a current feeding layer, for thereby filling copper in the interconnection groove defined in the surface of the semiconductor device.

Page 8, lines 5-12, please rewrite as follows:

According to the present invention, there is also provided a method of forming a copper interconnection on a semiconductor device, characterized by plating copper on a surface of a semiconductor substrate in an electroless copper plating process at a plating rate of 50 nm/min. or less, using an electroless copper plating liquid containing ~~bivalent~~ copper ions, a complexing agent, an aldehyde acid, and an organic alkali.

Page 9, lines 4-9, please rewrite as follows:

The present invention resides in a method of forming a copper interconnection on a semiconductor device by plating a surface of a semiconductor substrate with copper using an electroless copper plating liquid which contains ~~bivalent~~-copper ions, a complexing agent, an aldehyde acid, and an organic alkali.

Page 9, line 16 to page 10, line 3, please rewrite as follows:

As shown in Table 1 below, the electroless copper plating liquid according to the embodiment of the present invention contains 5 g/L of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ which supplies ~~bivalent~~-copper ions, 14 g/L of $\text{EDTA} \cdot 4\text{H}$ as a complexing agent, 18 g/L of glyoxylic acid as an aldehyde acid which serves as a reducing agent, and TMAH as an organic alkali for adjusting the pH to 12.5. The electroless copper plating liquid according to the embodiment of the present invention also contains a mixture of polyoxyethylene alkylether phosphoric acid and polyoxyethylene alkylether (e.g., RT610 manufactured by Toho Chemical Industry Co., Ltd.). The conventional electroless plating liquid contains 14 g/L of $\text{EDTA} \cdot 4\text{Na}$ as a complexing agent, 5 ml/L of HCHO as a reducing agent, NaOH as an alkali for adjusting the pH to 12.5, and α , α' -dipyridyl. The plating temperature for both plating liquids is 60°C.